

respectfully request the Examiner enter this Amendment as it does not raise any new issues or require any additional search of the art by the Examiner. All of the claimed elements and their relationships were either earlier claimed or inherent in the claims as examined. For example, dependent claims 10, 15, 36, and 40 previously recited a host computer receiving the collected events for processing. Therefore, this Amendment allows for immediate action by the Examiner. Finally, Applicants submit that entering the Amendment will place the application in better form for appeal, should the Examiner dispute the patentability of the pending claims.

In the outstanding Office Action dated February 3, 2003, the Examiner rejected claims 1-14 and 28-31 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,465,359 to Allen et al. ("Allen") and U.S. Patent No. 6,467,052 to Kaler et al. ("Kaler"). Applicants respectfully traverse this rejection.

A. Allen is Not Analogous Art

To rely on a reference for a rejection under § 103(a), the reference must be analogous prior art. See M.P.E.P. § 2141.01(a). Allen—as discussed at length in the previous Amendment—has nothing to do with collecting software related events. Allen instead deals with an entirely distinct area of endeavor: "managing structures and users of structures in a data processing system." (See, e.g., col. 5, lines 43-52) (e.g., managing a user's connectivity status to a network data store).

There are two criteria in determining whether a reference is analogous: (1) whether the reference is in the current invention's field of endeavor, or (2) whether the reference is still reasonably pertinent to the particular problem with which the inventors were concerned. M.P.E.P. § 2141.01(a). A reference is reasonably pertinent if it is one

which, because of the matter with which it deals, logically would have commended itself to the inventor's attention in considering his problem. Id. Thus, the purposes of both the invention and the prior art are important in determining whether the reference is reasonably pertinent to the problem that the invention attempts to solve. If the reference is non-analogous art, it cannot be used to support a rejection under 35 U.S.C. § 103.

Applicants' claimed invention is not in the same field of endeavor as Allen. The present invention relates to monitoring the operation of targeted computer programs by collecting, from those target programs, software related events relating to the program's performance. Allen, in contrast, manages data structures and the users of those data structures to track each user's status. (Col. 2, line 61 - col. 3, line 25; col. 5, lines 42-52). The field of Applicants' invention (monitoring the performance of computer programs in a distributed system) and the field of Allen (tracking the status of users in a data processing system), thus have absolutely no relation whatsoever.

Also, Allen is not reasonably pertinent to the particular problem with which Applicants were involved. The purpose of Allen is for "managing structures and users of structures and for recording status of users and of structures in a data processing system" such that "structures and the status of users of these structures may be maintained across termination of one or all users of a coupling facility located within the data processing system." (Col. 5, lines 42-52). Again, the present invention relates to "monitoring the operation" of targeted computer programs by collecting synchronized "software related events relating to the performance" of a program.

Consequently, because Allen is not analogous art, the Examiner may not rely upon this reference for a § 103 rejection. See M.P.E.P. § 2141.01(a).

B. Allen and Kaler Do Not Teach All of the Limitations of Claims 1 and 28

Even if Allen is analogous art, the cited references do not teach or suggest all of the limitations of Applicants' claims 1 and 28. Claim 1, for example, defines a system for monitoring the operation of computer programs by collecting software related events. As recited in the claims, each software related event relates to the performance of a respective target program and is received from that target program by a corresponding event collection card. Each collection card is installed on the same system bus as its respective target program and includes a time stamp clock to time stamp each event as it is received. A sync control unit synchronizes the time stamp clock to a sync signal received by a sync interface. A collection control unit then time stamps the collected events according to the synchronized time stamp clock and stores the time stamped event in an event memory. Finally, each collection card sends the collected software related events to a host computer that monitors the performance of the target programs based on the collected events.

As described above, Allen differs from the claimed invention in that it discloses managing users of data structures in a data processing system so that the system may then track the status of a user's connection. (See, e.g., col. 5, lines 45-51; col. 6, lines 28-32; col. 54, lines 2-6). In the Office Action, the Examiner refers to the disclosure of Allen associated with Figs. 1 and 20 as disclosing the claimed event collection cards.

These portions of Allen, however, have nothing to do with monitoring the operation of a target program by collecting software related events to the performance of the program.

Referring to these portions of Allen, they describe a plurality of central processing complexes (CPC) 12 coupled to an I/O system 14 and a coupling facility 16. Each CPC 12 has an operating system 13 having a management facility 15 for “managing structures and users of structures and for recording status of users and structures” in coupling facility 16. (Col. 6, lines 11-14). Coupling facility 16 thus “contains storage accessible by the CPCs, performs operations requested by programs in the CPCs and maintains status regarding structures and users of structures” located within facility 16. (Col. 7, lines 5-8). Accordingly, coupling facility 16 can correlate data with the status of users of that data across the multiple CPCs.

Thus, Allen does not disclose or suggest a plurality of event collection cards receiving software related events or computer program events from respective target programs, where each software related or computer program event relates to the performance of a target program, as recited in claims 1 and 28. Moreover, as defined in the specification, the term “event” refers to any software related event occurring in or generated by a monitored program, including an event occurring in or generated by a software thread of the monitored program. (Specification, Page 8, Lines 7-9). In no way does Allen deal with collecting software related events relating to a program’s performance. At most, Allen simply collects user statuses.

The events referred to by Allen, and relied upon by the Examiner, merely relate to user connections. (See, e.g., col. 26, lines 13-24). As described above, the Allen system then uses information on each user’s connection to track user status after a

connection is terminated. Nothing in Allen even remotely deals with the monitoring of computer programs by collecting software related events from those programs, as recited in the claims. The Examiner has thus distorted the true teachings of Allen in an effort to reject the claims.

In fact, the portions of Allen referred to by the Examiner highlight these clear differences between Allen and the claimed invention. For example, the Examiner refers to local cache 20 of Allen as disclosing an event memory for storing above claimed events. (Office Action, p. 2). But Allen teaches that local cache 20 only stores information on the data structures accessed by the users. (Col. 7, line 63 - col. 8, line 10). Local cache 20 does not, as suggested by the Examiner, store software related events received from and related to a target program, as recited in the claims.

In the Office Action, the Examiner admits that Allen does not disclose event collection cards having a sync control unit for synchronizing a time stamp clock to the sync signal received by the sync interface, where the time stamp clock provides a time stamp when each event is received, as recited in claims 1 and 28. To cure this defect of Allen, the Examiner applies Kaler for its apparent disclosure of synchronizing events from different computers.

While Kaler refers to synchronizing the clocks of multiple, distributed LECs 112,152, Kaler teaches using a standard "clock skew calculator" to synchronize the timing of the received events. (Col. 13, lines 47-50). Thus, the clocks are synchronized by calculating a clock skew adjustment—made at the centrally located VSA 100—for correcting any timing differences between the different clocks of the LECs 112, 152. Thus, such an arrangement does not even transmit a synch signal to synchronize the

clocks of each LEC. Kaler, therefore, fails to overcome the deficiencies of Allen noted above. Namely, Allen and Kaler, taken alone or in combination, fail to disclose or suggest event collection cards, each having a sync control unit for synchronizing a time stamp clock to a sync signal received by a sync interface, where the time stamp clock provides a time stamp when each event is received, as recited in claims 1 and 28.

The Examiner also rejected claims 5-9, 12-15, 32-35, and 38-40 under 35 U.S.C. § 103 as unpatentable over Allen, Kaler, and U.S. Patent No. 6,073,255 to Nouri. The Examiner relies upon Nouri for its apparent disclosure of a master card synchronizing a slave card. Since Nouri fails to cure the above deficiencies of Allen and Kaler, however, and since claims 5-9, 12-15, 32-35, and 38-40 depend from claims 1 or 28, these claims are allowable for the reasons given above.

The Examiner also rejected claims 10, 11, 36, and 37 under 35 U.S.C. § 103 as unpatentable over Allen, Kaler, Nouri, and U.S. Patent No. 5,375,070 to Hershey. The Examiner relies upon Hershey for its apparent disclosure of a bus isolation unit. Since Hershey also fails to cure the above deficiencies of Allen and Kaler, however, and since claims 10, 11, 36, and 37 depend from claims 1 or 28, these claims are similarly allowable for the reasons given above.

For at least these reasons, claims 1 and 28 are nonobvious and thus allowable over any possible combination of Allen and Kaler. Because claims 2-15 and 29-40 ultimately depend from either claim 1 or 28, these claims are allowable for at least the same reasons given above for claims 1 and 28.

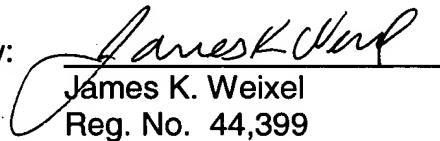
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EXPEDITED PROCEDURE REQUESTED UNDER 37 CFR § 1.116
USSN 09/432,618

Therefore, in view of the foregoing remarks, Applicants respectfully request the reconsideration and reexamination of this application and the timely allowance of pending claims 1-15 and 28-40.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 07-2339.

Respectfully submitted,

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APPENDIX TO AMENDMENT AFTER FINAL OF MAY 3, 2003

Version with Markings to Show Changes Made

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Amendments to the Claims

Technology Center 2100

1. (Twice Amended) A system for monitoring the operation of computer programs by collecting software related events relating to the performance of a plurality of target programs, each program running on a respective target processor, and each target processor being located on a separate system bus, the system comprising:

a plurality of event collection cards, each receiving software related events from a respective one of the plurality of target programs, wherein each of the plurality of event collection cards and the respective one of the target programs are installed on the same system bus, and wherein each event collection card includes:

a time stamp clock for providing a time stamp when each event is received;

an event memory for storing the received events;

a sync interface unit for receiving a sync signal;

a sync control unit for synchronizing the time stamp clock to the sync signal received by the sync interface; and

a collection control unit for time stamping the collected events according to the time stamp clock synchronized to the sync signal, [and] for storing the time stamped events in the event memory, and for sending the collected software related events to a host

computer that monitors the performance of the target programs based on the collected events.

10. (Amended) The system of claim 1, wherein the event collection card sends the collected events to [a] the host computer for processing, and wherein the event collection card further includes:

a bus interface unit, connected to an event collection bus, for receiving events from the target processor over the system bus, wherein the bus interface unit forwards the received events to the collection control unit over the event collection bus;

a processing unit, connected to a local bus, for sending the collected events to the host computer; and

a bus isolation unit for allowing the event collection bus and the local bus to operate in parallel.

15. (Amended) The system of claim 1, wherein the collection control unit updates a memory count for each time stamped event stored in the event memory, wherein the event collection card sends the collected events to [a] the host computer for processing, wherein the event collection card further includes:

a processing unit for sending the collected events to the host computer according to the memory count.

28. (Twice Amended) In a system having a plurality of target programs, each program running on a respective target processor, and each target processor being located on a separate system bus, wherein each of a plurality of event collection cards and a

respective one of the target programs are installed on the same system bus, wherein each event collection card performs a method for monitoring the operation of computer programs, comprising:

receiving software related events from the respective one of the plurality of target programs, each software related event relating to the performance of a respective target program;

storing the received events in an event memory;

receiving a sync signal;

synchronizing a time stamp clock to [a] the received sync signal;

time stamping the collected events according to the time stamp clock synchronized to the sync signal; [and]

storing the time stamped events in the event memory; and

sending the collected software related events to a host computer that monitors the performance of the target programs based on the collected events.

36. (Amended) The method of claim 28, further including the steps of:
sending the collected events to [a] the host computer for processing;
receiving events from the corresponding target processor over an event collection bus;

sending the collected events to the host computer using a local bus; and
allowing the event collection bus and the local bus to operate in parallel.

40. (Amended) The method of claim 28, further including the steps of:

updating a memory count for each time stamped event stored in the event memory;

and

sending the collected events to [a] the host computer according to the memory
count.